Pharmaceutical Chemistry Journal 2016 vol.49 N10, pages 711-714

Amperometric Detection Under Batch-Injection Analysis Conditions of Caffeine on an Electrode Modified by Mixed-Valence Iridium and Ruthenium Oxides

Shaidarova L., Chelnokova I., Degteva M., Makhmutova G., Leksina Y., Gedmina A., Budnikov G.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016, Springer Science+Business Media New York.Mixed-valence Ir–Ru oxides (IrOx—RuOx) electrodeposited on a glassy-carbon electrode surface were found to exhibit catalytic activity for caffeine oxidation. An amperometric method for caffeine detection at this modified electrode under batch-injection analysis conditions was developed. The analytical signal was linearly dependent on the caffeine concentration in the range 5 × 10−8 – 5 × 10−3 M. The developed method was tested for caffeine determination in tablets, solutions for injection of caffeine—sodium benzoate, and coffetamin tablets.

http://dx.doi.org/10.1007/s11094-016-1358-5

Keywords

batch-injection analysis, caffeine electrochemical oxidation, chemically modified electrodes, mixed-valence Ir–Ru oxides